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A DESCRIPTIVE STUDY OF THE GRADES 1 - 9 STUDENT
POPULATION OF THE BONNYVILLE SCHOOL DIVISION

by



JAMES D. WELSH

A THESIS

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ABSTRACT

The purpose of the study was to determine the composition of children in the Bonnyville School Division No. 46 in terms of general ability and physical defects.

The sample consisted of all children, grades 1 to 9, who attended school in the Bonnyville School Division No. 46 from September, 1970 to June, 1971. The Canadian Cognitive Abilities Test was administered to all grade 1 and all grade 2 students. The Canadian Lorge-Thorndike Tests were administered to all students in grades 3 to 9. The I.Q. scores obtained served as a measure of general ability.

A Teacher Report Blank, concerning general ability and physical health, was completed by each homeroom teacher.

The data were analyzed by comparing the expected results to the actual results obtained. A chi-square goodness of fit was computed to compare the sample to the general population. Although differences were generally significant at the .05 level, their absolute values tended to be small.

Finally, I would like to express appreciation to my wife Karen, for her encouragement, continued interest, and whose understanding of this project will stand as evidence.

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CHAPTER I

Introduction

In the last ten or fifteen years, a favourable attitude toward exceptional children has been rapidly developing. It is an attitude of understanding, respect, and acceptance combined with recognition of the child's right to adequate education and treatment. This point of view was expressed by the World Health Organization in 1954, (Technical Report Series No. 75) as follows:

Every child has the right to develop his potentials to the maximum. This implies that all children, irrespective of whether or not they suffer from mental or physical handicap, should have every access to the best medical diagnosis and treatment, allied therapeutic services, nursing and social services, education, vocational preparation, and employment. They should be able to satisfy fully the needs of their own potentialities and become, as far as possible, independent and useful members of society (p. 1).

At the 1967 WHO Conference in Geneva, this statement was reviewed and accepted as still valid. Educators also have accepted this attitude with a trend toward provision for all types of exceptional children. The school population is becoming more heterogenous.

Locally, the Blair Report (1969) outlined the factors contributing to a more heterogenous school population as follows:

... (a) changes in ages of compulsory school attendance, (b) medical technology, which has lowered infantile mortality but raised the percentage of children with physical abnormalities, e.f., neurological impairments, (c) the trend toward provision for all types of exceptional children under the public school's jurisdiction (p. 120).

The Alberta Department of Education junior and senior handbooks (1970) suggested that the general objectives of education should be: "personal development, growth in family living, and growth toward competence in citizenship (p. 1)." Rucker (1960) listed nine educational objectives which overlap with the above. General agreement exists as to the objectives of education. However, the methods of achieving those objectives differ.

Equality of educational opportunity is not a matter of providing the same curricula, methods of teaching, and school facilities and equipment for all children. As Laycock (1963) stated: "It is a matter of providing sufficiently varied curricula, teaching methods, and school plant and equipment so that all children will have an equal (not the same) chance to develop their potentialities to the maximum (p. 23)". In Alberta, attempts have been made to meet the needs of exceptional children by the development of opportunity classes, classes for emotionally disturbed children and for the visually-handicapped. Also, curriculum

guides with suggested activities and methods of instruction have been developed for these special classes. Thus, in the case of exceptional children, it is not so much that the aims differ as that the methods of achieving these aims are different.

Educators must know children's characteristics if they are to meet their needs adequately, since it is an accepted fact that schools have a high degree of influence on personal development, mental health, and need fulfillment.

In any community, sound school planning in the areas of curriculum, new buildings, and teaching staff, and sound choice of methods and materials to be used depend heavily upon the characteristics of the community's children. This is almost a truism: yet many schools and many communities know far too little about the children they teach (Illinois, 1957, p.v.).

A variety of programs must be provided for the different kinds of pupils in our schools. But who are these children? How are they different? How can they be identified?

The Blair Report (1969) suggested that: "A survey of the school population in Alberta should be conducted as a basis for planning services. Sufficient information is not available regarding the incidence and nature of the various problems ... (p. 137)." The present writer, Pupil Personnel Services Director at Bonnyville, Alberta, carried

out a survey of the school population as recommended by Blair.

Statement of the Problem

The primary purpose of the research was to determine the nature of the Bonnyville School Division No. 46 student population.

Objectives to be realized from analysis of the data were:

1. To determine the composition of children in the Bonnyville School Division No. 46 in terms of general ability.
2. To determine the composition of children in the Bonnyville School Division No. 46 in terms of physical defects.

CHAPTER II

Some Related Literature

Introduction

Surveys would appear to be one of the most reliable ways of obtaining statistical information but they are not without their problems (Crainford, 1970). Because methods of classification vary a real problem occurs when we try to make comparisons of the results of different surveys. How does each researcher define gifted, slow learner, or visually handicapped? Does maladjusted mean the same thing in different studies? Crainford (1970) stated: "It is not difficult to obtain estimates of the incidence of exceptionality in the entire child population (p. 54)." However, these estimates vary widely in the literature, so a problem of accepting or rejecting one or the other is constantly with the researcher.

Gifted

Individual or group intelligence tests are commonly used as a screening device in selecting children of superior intellectual potential. Of course the I.Q. is not the only variable used in deciding if a child is gifted or not. Other variables such as achievement, creativity and physical characteristics are considered. But as the State De-

partment of Education (1963) in a report of the Southern Regional Project for Education of the Gifted stated:

"Nation-wide, the I.Q. seems to be the most generally accepted single criterion for identifying the gifted (p.45)."

It is here that agreement ends and the cut-off point for I.Q. varies depending on the researcher.

The City of Ottawa Public School Board (1956) used an I.Q. of 145 and over to define a gifted population. Terman (1947) in his study of California gifted children used an I.Q. of 130 and over. In a curriculum research report concerning the student body in the New York City Schools (1958), it was concluded that all students with an I.Q. of 120 or better were considered to be gifted. The author found that the two most common scores to label a child as gifted are a fixed I.Q. of 120 or 130. However, the range of I.Q. scores used to define the gifted population was from 120 to over 150.

Related to the cut-off point in I.Q. a researcher selected to define a gifted population is the expected percentage of students in that category. In a curriculum research report concerning the student body in the New York City Schools (1958), it was found that the top ten per cent of the school population in terms of mental ability is

usually considered as gifted. Rideout (1954) stated: "By gifted children, then, we mean the top six to ten per cent in measured native intelligence ... (p.3)." The author found that the expected percentage of gifted people ranged from two to ten per cent depending on the cut-off point set by the researcher and the intelligence test used. The criteria employed to define giftedness varies widely.

Slow Learners

In addition to the gifted or to those students who are retarded, there are those in the school population who are unable to progress normally year by year in their school program. These are the children who usually remain in the regular classroom and are classified as slow learners. Kirk (1951), with the use of the Stanford-Binet, classified the slow learner as "those with I.Q.'s between 80 and 90 (p.42)." The United States National Committee on School Health Policies (1963) defined this group as those with I.Q.'s falling between 70 and 90. Ingram (1960) suggested that they would range from approximately 75 - 89 I.Q.

Featherstone (1951) used what he called a pragmatic definition of a slow learner, in that pupils with "an I.Q. below 91 and above 74 are so labeled (p. 2)," since most

pupils with an I.Q. above 90 can succeed fairly well in a regular class and those pupils below I.Q. 75 are placed in special classes. He further concluded that "a slow learner group may be thought of as having a 'central tendency' or average of about 85 I.Q. (p. 3)." There seems to be no fixed standard or level of ability below which a pupil must be called a slow learner. Of course, the mean and standard deviation of the intelligence test used will determine the expected percentage of slow learners in a school population.

Mentally Handicapped Educable

The term "mentally handicapped" is used for children who can be educated in special classes in the public schools. Thomas (1968) stated: "Educable retarded children are those whose individual intelligence test scores fall between 50 and 75 or 80 ... (p. 19)." Kirk (1951) and Terman (1960) used the range from 50 - 70. The Alberta Department of Education Curriculum Guide for Educable Mentally Handicapped (1965) used I.Q.'s between 55 and 75 to classify the educable student. In an experimental study of the mentally retarded, Kirk (1968) classified those with I.Q.'s between 50 and 75 as educable children. Apparently, there is an overlap in the categories used to classify mentally handicapped

educable children. This group contains from two and one half per cent to three per cent of the school population Crainford (1970) in the Celdic Report stated: " ... approximately two and one half per cent of the school population, falls into the 'educable' range (p. 57)."

Mentally Handicapped Trainable

The trainable retardate is not considered to be educable in the sense that he can learn academic skills to any degree of proficiency. But he has equal rights and must be provided an opportunity for an adequate living. In a survey of the mentally retarded, the Canadian Education Association (1964) defined the trainable retardate as "a person whose mental capacity is incapable of development beyond that of a child of normal mentality at eight years of age (p. 1)." Furthermore, they stated that the trainable retardate "is usually represented by an I.Q. of 50 or less (p. 1)."

Defective Vision and Blind

Vision is the primary avenue to education and the identification and removal of visual handicaps most certainly will increase the educability of children with vision

problems. The United States Department of Education and Welfare (1963) reported that: "There are approximately one visually handicapped child for every 1,000 to 1,500 of the school age population (p. 38)." A different estimate was found for England and Wales in that Jackson (1966) reported there are one in 3,400 partially-sighted children in those countries. The Canadian Dominion Bureau of Statistics (1961) have the blind and partially-sighted listed at .03 per cent of the population. In Alberta there are 39 students attending classes for the visually handicapped in Edmonton and Calgary.

Impaired Hearing and Deaf

The Dominion Bureau of Statistics (1961) estimate that the deaf and hard-of-hearing consists of 0.5 per cent of the general population. Crocio (1941) stated: "It is not often realized that among the recruits drafted in the last war almost eight per 1,000 were found to have defective hearing or other optic conditions (p. 1)." Locally the sixty-fifth annual report of the Alberta Department of Education (1970) have listed 124 students at the Alberta School for the Deaf. Also reported were a total of 102 students attending classes for the hearing handicapped in

Edmonton and Calgary.

Defective Speech

Speech defects vary from minor articulatory problems to more serious disorders such as stuttering. Palmer & Kidd (1961) in a study conducted in the United States, concluded "that about ten per cent of our school children have speech problems (p. 5)." A more recent report (Rochmis & Doob, 1968) discussed the incidence of speech defects in the school population and mentioned that the generally accepted percentage of incidence was 4 per cent. In Canada the Dominion Bureau of Statistics (1961) estimated that 2 per cent of the population have speech defects.

Estimates of Exceptional Children in the United States, Canada, and Alberta

Dunn (1963) estimated that "approximately eight per cent of the school-age population are now so exceptional in one or more areas as to need one or more special education services (p. 17)." An estimate of exceptionality in Table I was compiled by the United States office of Education and the Dominion Bureau of Statistics.

Dunn (1968) cautioned that these are national estimates that should hold up fairly well when applied to a state,

TABLE I

ESTIMATES OF EXCEPTIONALITY IN THE
UNITED STATES AND CANADA

AREAS OF EXCEPTIONALITY ^a	PERCENTAGE ESTIMATED	
	U.S.O.E. ^b	D.C.B.S. ^c
Intellectually limited	2.3	2.0
Educable mentally retarded	(2.0)	
Trainable mentally retarded	(0.3)	
Intellectually superior (gifted)	2.0	2.0
Disturbed and maladjusted	2.0	2.0
Emotionally disturbed		
Socially maladjusted		
Speech impaired	3.5	2.10
Hearing impaired	0.6	0.54
Hard of Hearing	(0.5)	
Deaf	(0.1)	
Visually impaired	0.09	0.13
Partially seeing	(0.06)	
Blind	(0.03)	
Nonsensory physically impaired	2.0	0.47
Crippled	(1.0)	(0.1)
Chronic health problems	(1.0)	(0.37)

a - Pupils with multiple special education needs counted more than once.

b - From Mackie, Romaine P., Personal communication, 1962.

c - From the Dominion of Canada Bureau of Statistics, Statistics of Special Education for Exceptional Children, 1954 - 1959. Ottawa: Queen's Printer, 1959.

province, or very large school district, but they will be found lacking in specific instances, especially when applied to certain local communities. Another caution expressed was that his estimates could not be well documented and that hopefully a more accurate census can be obtained in the years ahead.

In a recent study of mental health in Alberta (Blair, 1969) Dunn's estimates were applied to Edmonton with a school age population of 70,000. It was indicated that these estimates showed "a need for special education services of some kind for 5,600 students, far in excess of the approximately 1,200 students now in special classes (p. 125)."

Seastone (1971) used the 1969 population data and calculated the number of people in the five to seventeen age group in Edmonton, Calgary and the province of Alberta. Borrowing from the Blair report on mental health in Alberta (1969), Seastone used the estimates of exceptionality to calculate his findings. Those findings are presented in Table II.

TABLE II

EXPECTED & ACTUAL ENROLMENTS IN SPECIAL CLASSES
FOR EXCEPTIONAL CHILDREN

CALGARY, EDMONTON AND ALBERTA, 1969-70

	<u>Mentally Retarded</u>	<u>Speech and Hearing</u>	<u>Vision</u>	<u>Emotionally Disturbed</u>
<u>Calgary</u>				
Expected special students	2,089	2,757	136	2,089
Actual enrolment	917	50	19	82
<u>Edmonton</u>				
Expected special students	2,264	2,988	147	2,264
Actual enrolment	1,073	55	40	48
<u>Other Areas</u>				
Expected special students	4,552	6,009	296	4,552
Actual enrolment	1,432	-	-	-
<u>Total Province</u>				
Expected special students	8,905	11,754	579	8,905
Actual enrolment	3,422	105	59	130
Source: Calculated ¹				

Table II reappears in a report by the "Worth Commission" or the N-12 Education Task Force (1971). From the data in this table, Worth, (1971) concluded: There

seems to be an alarming discrepancy between the probable number of handicapped students needing special services and those actually receiving such attention (p. 35)." Thus one of the Worth proposals is that "a comprehensive assessment of needs in special education in Alberta be undertaken ... (p. 36)."

Summary

When conducting surveys of a school population many problems arise. Specifically, different writers use different definitions to classify the student population. Therefore, a student may or may not be classified as gifted depending on the researcher conducting the survey. This difference of opinion is reflected in the many estimates of the expected percentages of exceptionality, whether it be in general ability or physical defects.

In recent years an attempt has been made to estimate the number of exceptional children in Alberta. But a common approach or definition of exceptionality does not exist at this time. Thus it would appear that there will be a difference of opinion as to the number of children who should be considered as exceptional in the Alberta population. But as Crainford (1970) stated: "This is not to imply figures arrived at by this method may not be remarkably accurate but

they are impossible to verify and who is to say one guess is better than another (p. 54)."

CHAPTER III

Research Design, Instruments, and Procedures

This chapter outlines the design of the research, describes instruments used in data collection, and outlines procedures used in analysis of the data.

The survey research method was used to gather the data for this study. Kerlinger (1967) defined survey research as follows:

Survey research is that branch of social scientific investigation that studies large and small populations (or universes) by selecting and studying samples chosen from the population to discover the relative incidence, distribution, and interrelations of sociological and psychological variables (p. 393).

The survey method emerged in the twentieth century along with the development and improvement of sampling procedures. Survey research methodology has been developed mostly by psychologists, sociologists, anthropologists, economists, political scientists and statisticians (Campbell & Katona, 1953).

Kerlinger (1967) stated that surveys could be classified by the methods used to obtain information and suggested the "personal interview, mail questionnaire, panel, telephone and controlled observation (p. 395)" as the main types of surveys. A modification of the mailed questionnaire was

used in the present study.

Sample surveys are frequently used to investigate opinions and attitudes (Nunnally Jr., 1970). However, Kerlinger (1967) suggested that the survey's distinctive educational usefulness had not been realized, and had not been used to any great extent by educators. Also he thought that survey research was a useful tool for educational fact finding. Survey research is wide in scope, which allows for a great deal of information to be obtained from a large population. Surveys tend to be more expensive than laboratory studies, but the amount and quality of information they yield makes them economical (Kerlinger, 1967). Within sampling error ranges, survey research information tends to be fairly accurate. Kerlinger (1967) stated: "The accuracy of properly drawn samples is frequently surprising, even to experts in the field (p. 407)."

Survey research, however, also has its disadvantages. Some of the pitfalls as suggested by Nunnally Jr. (1970) are: "(1) inadequate sample size, (2) unrepresentative sample, and (3) artifacts of measurement, such as the wording of questions, that can lead to misleading results (p. 510)." Kerlinger (1967) and Rosenthal (1966) listed

similar disadvantages which overlap with the above. Other disadvantages of survey research are that they demand a great deal of time and are sometimes superficial.

To assist the reader in becoming familiar with the terminology that is used in this study, a number of terms are defined. These definitions are worded as they appear in the State of Illinois, How to Study your School Population, Bulletin No. 26, Illinois, 1957.

Definition of Terms

Defective Speech - if he substitutes one letter for another, lisps, stutters, omits sounds, distorts words, mumbles continually, tries hard but can't produce sound at times.

Defective Vision - if he rubs eyes frequently, frowns when reading, stumbles or runs into objects, can't follow a ball in motion, is irritable or cries when doing close work, holds things close to eyes, sometimes can't distinguish colours, complains of headaches, dizziness, or nausea.

Dropout - if he quit school during the 1970-71 school term.

Educable mentally handicapped - all students whose I.Q. is located in the 51 to 75 range.

Environmentally handicapped - he is usually not able to concentrate on his studies when he comes to school. He may be a year older than most of the other children in his grade, and his work is not up to the accepted standard. He probably has not been very regular in attendance and shows very little interest in school work. He may have been retained in one grade. He may be dirty when he comes to school, with little or no attention to his hair and teeth. He has frequent colds and often acts actually hungry. When attempts have been made to help the child through the PTA or welfare agencies, the father or mother has frequently been uncooperative. The parents rarely visit the school except to complain about something, and they take up no responsibilities in school affairs. They are critical of school promotional policies, and feel that the teacher and principal and other children "pick on" their child. The child has already (upper elementary grades) begun to talk of the time when he can "quit" school. In some cases the child may present the opposite picture, of having so many strong pressures from the family that he is unable to function at school.

Gifted - all students whose I.Q. is 125 or above.

He - (as used in the other definitions) - is defined as all

students in grades one to nine, attending school in the Bonnyville School Division #46 from September, 1970, to June, 1971.

I.Q. - a deviation I.Q. obtained from the Canadian Lorge-Thorndike Intelligence Tests, with a mean of 100 and a standard deviation of 16.

Impaired Hearing - if he seems inattentative or even "stupid", does not respond to questions or asks for repetitions, often speaks very loudly or softly or leaves out sounds, often holds head in tilted position or turns one ear.

Maladjustment - if he displays any of the following characteristics:

"withdrawn" - if he is exceptionally shy, fearful, easily upset and discouraged, frequently daydreams, doesn't stand up for himself, may be "too good", feelings are easily hurt, usually is unnoticed by other children.

"aggressive" - if he is excessively quarrelsome, defiant, destructive, a bully, a pest, fights others, may steal and lie, gets mad easily, frequently disrupts the class.

"anxious" - if he shows extreme nervous habits, such as nail biting, thumb sucking, muscle jerking, hair pulling, picking and scratching.

"other" - if there are other kinds of actions and attitudes which do not seem to be covered in the above classes, but which nevertheless appear as indications of serious problems, such as frequent absences, being excluded by group, jealous, unhappy, etc.

Slow Learner - all students whose I.Q. is located in the 76 to 94 range.

Trainable mentally handicapped - all students whose I.Q. is located in the 25 to 50 range.

The Sample

The sample consisted of all children, grades one to nine, who attended school in the Bonnyville School Division No. 46 from September, 1970, to June, 1971. Specifically, the schools involved were:

1. Ardmore - grades one to nine with an enrolment of 279 students.
2. Cold Lake - grades one to nine with a total enrolment

of 255 students.

3. Duclos - grades one to nine with a total enrolment of 254 students.

4. Fort Kent - grades one to six with a total enrolment of 129 students.

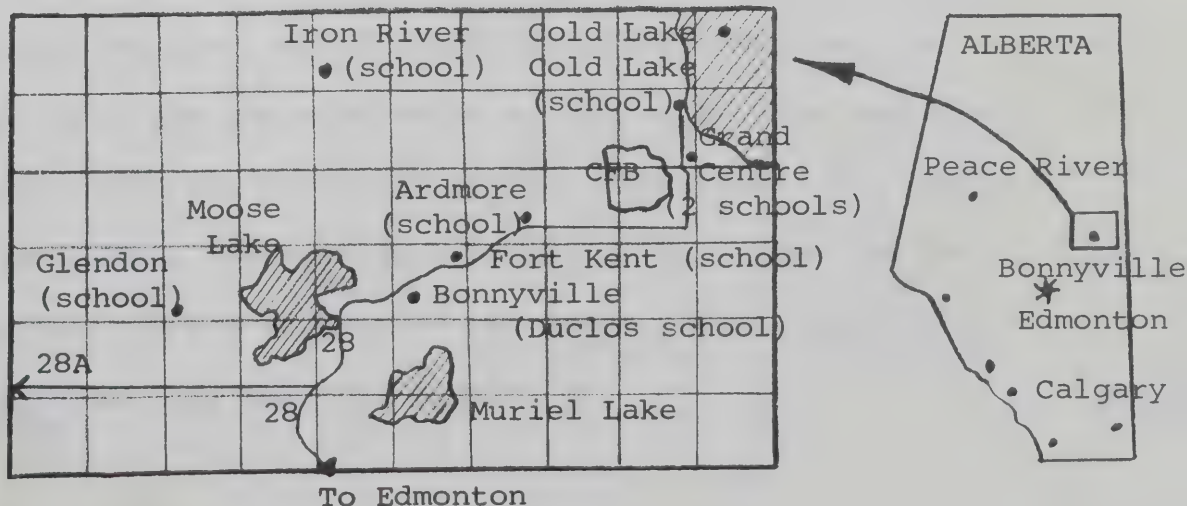
5. Glendon - grades one to nine with a total enrolment of 377 students.

6. Grand Center Elementary - grades one to six with a total enrolment of 387 students.

7. Grand Center Junior High - grades seven to nine with a total enrolment of 181 students.

8. Iron River - grades one to nine with a total enrolment of 219 students.

Also included were five students from the Bonnyville School Division No. 46 who attended the Lakeland School for the Retarded. Thus the sample was composed of 2,086 students.



The Questionnaire

In a talk delivered at the Annual Conference of the Alberta Guidance Council, in 1967, R. Ousta presented a paper entitled The Current Development of Non-Urban Counselling in Alberta. A method was suggested on how to study school populations. This same method was outlined in the Blair Report (Blair, 1969). For use in the present study the writer freely adopted this instrument which originated in the Illinois Curriculum Program (Illinois, 1957) and had been satisfactorily used by Ousta in the Red Deer County #23. A copy of the Questionnaire is provided in Appendix A.

Procedure

1. The Canadian Cognitive Abilities Test Primary 1/Form 1 and Primary 2/Form 1 were administered respectively to all grade one and two students. Either the researcher or another teacher, usually the principal, assisted the teacher with the administration of the test. The tests were then scored by the home room teacher concerned. The manual provided simple and straight forward instructions for the administration and scoring of the tests. This should tend to counteract any examiner's bias.

2. The Canadian Lorge-Thorndike Intelligence Tests, Multi-Level Edition was administered to all grade three to nine students. With the exception of the grade three classes, the home room teachers administered the tests alone. The writer or another teacher, usually the principal, assisted the grade three teachers with their test administration. The tests were then machine scored at the Department of Education scoring service. The writer and his secretarial staff then converted the raw scores to I.Q. scores.

3. The grades three to nine teachers were asked to average the Canadian Lorge-Thorndike Verbal and Non-verbal I.Q. scores to obtain a "Total I.Q." score. This was the I.Q. score used on Column Five of the questionnaire (Appendix A).

4. A questionnaire (Appendix A) with each teacher's name on it, was delivered by the writer to the eight principals concerned. Further to the written instructions, any questions concerning the questionnaire were answered verbally at that time. All but one section of the questionnaire required objective data; that is, information taken from the cumulative record. The section dealing with physical handicaps relied on teachers' subjective judgments. For

example, the teachers had to interpret for themselves the meaning of "hard of hearing". At the same time the Drop-out Record (Appendix B) was delivered by the writer to the eight principals, for their completion. The questionnaires and Drop-out Records were to be returned by June 30, 1971.

5. After the questionnaires were returned, the writer, with the assistance of his secretarial staff, summarized the data on to the Roster of General Ability (Appendix C).

6. The writer then transferred the data from the Roster of General Ability, and from the Drop-out Record forms to the Population Summary (Appendix D).

7. Using the Canadian Lorge-Thorndike Intelligence Test mean of 100 and the standard deviation of 16, along with a table of "ordinates and areas of the normal curve", the author computed the expected percentages of students in the different categories of ability.

8. Some chi square "goodness of fit" were computed but owing to the large number in the sample any slight difference came out highly significant.

9. Finally, the data were analyzed by comparing the expected results to the actual results obtained.

CHAPTER IV

Presentation and Discussion of Data

An analysis of the data obtained through the questionnaires is reported in this chapter. The composition of the students in general ability and in physical defects is examined. Further, this chapter deals with the number of maladjusted, and environmentally handicapped children reported. A short section on the number of drop-outs is also mentioned.

Composition of Students in General Ability

Gifted. Areas under the normal curve were used to estimate that 5.9 per cent of the student population or 123 students should be found in the gifted category. By totalling the number of students who obtained an I.Q. of 125 or above, 5.2 per cent, or 109 students fell into this category. Thus it would appear that there are approximately the same number of gifted children in the Bonnyville School System as would be estimated in the general population.

Slow Learner. Areas under the normal curve were used to estimate that 29.3 per cent of the student population or 611 students should be found in this category. By totalling the

number of students who obtained an I.Q. between 75 and 94, there were found to be 33.6 per cent or 701 students. Thus there would appear to be 90 more slow learners than was expected. As mentioned in a previous chapter, several chi-square tests of goodness of fit were used to examine these data. Most of the tests indicated highly significant differences, however, owing to the large sample size, even small absolute differences had high significance. The chi-square tests, therefore, were not of much value to the study.

Mentally Handicapped Educable. Areas under the normal curve were used to estimate that 3.5 per cent of the student population or 73 students should obtain an I.Q. in the range of 50 to 75. By totalling the number of students in this range of ability, it was found that 5.3 per cent or 119 students were counted. During the 1970 - 1971 school year the Bonnyville School Division operated five opportunity rooms for students identified as mentally handicapped educable. These students had been tested with the Stanford-Binet or the Wechsler Intelligence Scale for Children, either by the Provincial Guidance Clinic or the writer. The results of this testing had placed 60 students in the educable mentally handicapped range. Further to this the

writer had identified, by the use of the Wechsler Intelligence Scale for Children, the need for a sixth opportunity room which will go into operation during the 1971 - 1972 school year. Thus there are approximately 90 to 100 students identified as mentally handicapped educable by individual intelligence testing in the Bonnyville School System. The difference in the numbers in the opportunity rooms and the above stated 90 to 100 students is due to the fact that legally a maximum of 15 students can be enrolled in an opportunity room. The Canadian Lorge-Thorndike Intelligence Test manual quotes correlations with its counterpart the Lorge-Thorndike tests in the United States, with the Stanford-Binet, and with the WISC Verbal scale as approximately 0.8. The writer has noticed a high correlation between the WISC Verbal and the Canadian Lorge-Thorndike "total I.Q." but did not use any statistics to confirm this. Thus, it would appear that the 119 students identified as mentally handicapped educable is a reasonable figure to expect in the school system.

Mentally Handicapped Trainable. Areas under the normal curve were used to estimate that .05 per cent or 10 students would be found in this range of mental ability. The Bonnyville

School Division has 10 students in this category. Five of these students are attending the Lakeland School for the Retarded, two others remain at their homes pending placements and the other three are in provincial institutions. The information on the five students not attending the Lakeland School for the Retarded was obtained from the North Eastern Health Unit records.

High and Low Average. Areas under the normal curve were used to estimate that 55.5 per cent or 1157 students would fall in this category. These would be the students who obtained an I.Q. in the 95 to 124 range. After adding the totals for the other four groups previously mentioned and subtracting them from the total sample of 2086, it was found that 54.9 per cent or 1147 students are located in this range. This difference is explained by the higher than expected number of slow learners and mentally handicapped educable students identified in the Bonnyville School System.

A summary of each category of general ability is presented in Table III.

TABLE III

COMPOSITION OF BONNYVILLE STUDENTS IN GENERAL ABILITY

Student	Estimated Percentage of General Population	Number Expected in Your School System	Actual Percentage Found in Bonnyville School System	Actual number in Bonnyville School System
Gifted	5.9% x 2086 =	123	5.2%	109
Slow learner	29.3% x 2086 =	611	33.6%	701
Mentally Handicapped Educable	3.5% x 2086 =	73	5.3%	119
Mentally Handicapped Trainable	0.5% x 2086 =	10	0.5%	10
High and Low Average	55.5% x 2086 =	1157	54.9%	1147
Total				2086

Composition of Students with Physical Defects

Defective Vision. The Illinois' school survey estimated that 0.5 per cent or 10 students in the Bonnyville School System would have defective vision. The teachers according to the criteria given identified 4.1 per cent or 85 students. The North Eastern Health Unit performs eye examinations on all children entering grade one and on individual referrals from the teachers or the writer. Once a student is identified as needing corrective lens he is referred to a qualified eye specialist. But some families cannot afford to buy the lens, or have problems covering the physical distance to keep the appointments, or both. Related to this if a child does receive his glasses and breaks them, again the problem arises with the lack of money and the distance to be travelled. Also once a child has glasses his eyes are not checked yearly so that his vision once again is poor. To counteract these problems, the health nurses try to obtain money from church or service organizations for a child's glasses. Also the writer has instituted a follow-up procedure to the nurses recommendation for a complete eye examination so that a child does receive his glasses if at all possible. Thus it would appear that 85 students

identified is not an unreasonable number in lieu of the above mentioned problems.

Blind. No number of blind children were expected since they would not be found in our regular school system. The North Eastern Health Unit records has on record three children blind in one eye only and one totally blind that is in an institution.

Impaired Hearing. The Illinois' school survey estimated that 1.5 per cent or 31 students would have impaired hearing. The teachers identified 1.6 per cent or 33 students as having impaired hearing. Most of these were confirmed by analyzing the North Eastern Health Unit records. Those that are not on record will be given an audio test by the health nurse.

Deaf. The Illinois' school survey estimated that .05 per cent or 10 students of the school population would be deaf. Of course these students would not be in our regular school system. The Health Unit records have two students listed as deaf. Thus it would again appear that impaired hearing or deafness in the Bonnyville School System is approximately what is expected in the general population, with the number

of deaf being lower than expected.

Other Physical Defects. Included in this category are those students with poor motor control and coordination, who walk with a limp, have pain during exercise, have jerky motions, or have defective bones, muscles, heart, lungs, etc. It was estimated that two per cent or 41 students would be found in the Bonnyville School Division. The teachers identified four per cent or 83 students in this category. Most of these students appear in the Health Unit records so that the 83 identified, though twice as many as expected, are already receiving medical care.

Defective Speech. The Illinois' school survey estimated that six per cent or 125 students would have defective speech. The teachers identified 8.5 per cent or 178 students with defective speech. Most of those students are already known to the writer and to the Health Unit with the more severe cases receiving speech therapy at the Glenrose Clinic. The rest of the students will need testing to confirm the teachers judgement about their students' defective speech, but the 8.5 per cent identified seems like a reasonable amount in lieu of other information about these students.

Maladjusted. It was estimated that seven per cent or 146 students would be considered to be maladjusted. The teachers identified 20 per cent or 438 children as being maladjusted. This difference seems high. It is possible, because the degree of maladjustment was not defined, that some rather normal children were listed as maladjusted. However, there may indeed be a high incidence of maladjustment. Frequent absences, are common in the school division; this was used as one criterion for maladjustment. Also, approximately 100 students were referred to the writer in a ten month period for aggressive behavior. The study identified 33.6 per cent of the student population as slow learners. Possibly, these slow learners could be anxious or withdrawn due to their frustration of competing in a regular classroom.

Environmentally Handicapped. The Illinois' school survey estimated that 20 per cent or 417 students would be considered to be environmentally handicapped. The teachers identified approximately 24 per cent or 502 students in this category. This area of Alberta is designated by the government as one of the ten most deprived areas economically in the province. But there are two towns with a population of

approximately 1200 and two other towns with a population of 2500 included in this sample. Therefore the students living in these areas compensate for the other students living in the outlying rural part of the school division which may or may not have electricity and, therefore, television. Thus the 24 per cent identified is approximately what one would expect to receive in this area compared to 20 per cent in the general population.

Dropouts. The dropout survey that the eight principals filled out had a total of nine students who left school the past year without completing their grade. These students were all 16 years old or older so could legally quit school. The writer is aware of one other student expelled from school at the age of 15. Only two of the eight schools involved had dropouts, with one of these from one school and eight from the other school.

CHAPTER V

Summary, Conclusions, and Implications

The primary purpose of this study was to determine whether, on the basis of the kinds of children in the Bonnyville School Division, additional educational services are needed. Specifically the purpose of the investigation was to determine: (1) the composition of the students in Bonnyville School Division No. 46 in terms of general ability and (2) the composition of the students in Bonnyville School Division No. 46 in terms of physical defects. The sample consisted of 2,086 students, who were in grades one to nine in the Bonnyville School Division, during the 1970 - 71 school year. A questionnaire was completed by the teachers, with the remaining data obtained from the North Eastern Health Unit.

To give meaning to the data, percentage figures were calculated for each category of ability and then compared with the expected percentage in that category. The numbers of students with physical defects were totalled in each category and then compared with the expected totals.

Summary of Findings

The findings of this study were as follows:

1. Gifted:

Expected - 5.9% or 123 students

Observed - 5.2% or 119 students

2. Slow Learners:

Expected - 29.3% or 611 students

Observed - 33.6% or 701 students

3. Mentally Handicapped Educable:

Expected - 3.5% or 73 students

Observed - 5.3% or 119 students

4. Mentally Handicapped Trainable:

Expected - .5% or 10 students

Observed - .5% or 10 students

5. Average:

Expected - 55.5% or 1157 students

Observed - 54.9% or 1145 students

6. Defective vision:

Expected - 10 students

Observed - 85 students

7. Blind:

Observed - 1 student

8. Impaired Hearing:

Expected - 31 students

Observed - 33 students.

9. Deaf:

Expected - 10 students

Observed - 2 students

10. Other Physical Defects:

Expected - 41 students

Observed - 83 students

11. Defective Speech:

Expected - 125 students

Observed - 178 students.

12. Maladjusted:

Expected - 146 students

Observed - 438 students

13. Environmentally handicapped:

Expected - 417 students

Observed - 502 students

Conclusions

The school system seems to be meeting the needs of most, but not all, students. Satisfactory programs exist

for the largest single group in this study, the average student; he is attending regular classes taught by qualified teachers. The mentally handicapped trainable child is attending either a provincial institution on a full time basis or a day school for the retarded. Seventy-five of the 119 mentally handicapped educable students identified are attending five opportunity classes with special curricula and qualified teachers.

Students with physical handicaps seem to be identified and adequate facilities seem to exist to meet their needs. The North Eastern Health Unit tests the hearing and sight of every pre-school child. A referral system for medical problems has also been implemented in the schools. These referrals are transferred to the proper specialists to ensure that the students receive adequate medical care.

The needs of some students, however, are not being met. No special provisions are made for the second largest group, the slow learner; he is placed in the regular classroom along with the average student. Although two-thirds of the mentally handicapped educable students are attending opportunity rooms, one-third remains in the regular classroom. The gifted which comprise 5.2% of the population

are streamed from grades one to six, however, the remaining years of their public education are spent in the regular classroom.

Recommendations

The study identified 33.6 per cent of the student population as slow learners and 20 per cent as maladjusted. These students need to be identified early. It is recommended that a comprehensive testing program be implemented to screen all children entering grade one. Early identification is essential in order to help the child with problems before he becomes frustrated and discouraged in school. Logan (1960) suggested that early identification by testing was essential to determine each child's capacities, needs and limitations. This would ensure that early schooling would challenge each child's capacities and would be adopted to his level of maturation so that he may profit from his experiences. William & Jacobson (1969) suggested that there are certain cognitive abilities upon which academic achievement depends. Analysis of these cognitive abilities by testing and by applying the major principles of learning, the educator will be better able to implement a program to meet the student's needs. Bower (1969) stated that early

identification of emotionally disturbed children is essential since they can be helped more effectively and economically if detected early.

Support personnel needs to be hired to perform the testing, to interpret the results to parents and teachers, and to consult with the teachers in setting up the proper program for each child. If these children are to remain in the regular classes, teacher aides and extra teachers are needed. These extra or floating teachers could at various times, provide special help to small groups while the homeroom teacher conducts the regular classes. They could also be involved in developing new and varied curricula and innovate teaching methods.

Probably the most important factor in bringing about the recommended improvements is a financial one. If these changes are to be made in Bonnyville and in other similar rural areas, the grant structure for financing education would have to be changed at the provincial level to ensure that sufficient funds be available.

Although a research project of this kind is by its very nature somewhat threatening to a school system, it is a valuable way of assessing the degree to which the needs of students are being met. This researcher would encourage

other school systems that feel a need to evaluate the work they are doing to embark on a study similar to this one. This would help provide statistics of exceptionality in Alberta and make the Department of Education aware that all children in rural Alberta are not having their needs met.

A word of caution is suggested in that the survey is an evaluation of the educational system and process rather than a rating to categorize students into a mold so firm he may never escape. It is only through asking that we know the extent to which we are effective and how much improvement is necessary to meet the needs of the students we serve.

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A P P E N D I C E S

grade _____

school _____

teacher _____

HOW TO STUDY YOUR SCHOOL POPULATION

TEACHER REPORT BLANK

Date _____

Return to Principal by _____

		From office records:					From teachers' judgments:		
		1	2	3	4	5	6	7	8
Col.	Name	Address	Age	I.Q.	I.Q. Rating (1 to 5)	Achievement Rating (1 to 5)	Physical Handi- caps (vision, hearing, speech other)	Maladjustment (withdrawn, aggressive, anxious, other)	Environ- mental Handicaps (I, II, or III)
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									
13.									
14.									
15.									
16.									

INSTRUCTIONS TO TEACHERS

(For Filling in Teacher Report Blank)

To Office Personnel: Fill in as many of the columns 1 through 5 as possible from the data on office records.

To Elementary Teachers (including self-contained 7th and 8th grades): Fill in columns 6 through 9 from your personal knowledge of each pupil in your room.

To High School Teachers and Committee Members (including departmentalized junior highs): Fill in columns 6 through 9 from your personal knowledge of each pupil in the grade or home room for which you are responsible. Committee may wish to give separate ratings and then average these ratings and put the average on the REPORT BLANK; or they may prefer to arrive at a joint rating through discussion.

COLUMN 1: List all pupils in each room or grade in alphabetical order.

COLUMN 2: Give addresses with street and number.

COLUMN 3: Give age in years and months as of the present date, as 11-2 meaning 11 years and 2 months.

COLUMN 4: Give intelligence quotient score, or average I.Q. score if more than one is recorded.

COLUMN 5: For this column, convert the I.Q. scores in column 4 to I.Q. "ratings" of one through five as follows:

Ratings #1	-	includes I.Q.'s 125 and above
#2	-	" I.Q.'s 115 to 124
#3	-	" I.Q.'s 95 to 114
#4	-	" I.Q.'s 75 to 94
#5	-	" I.Q.'s below 75

COLUMN 6: Achievement rating. Do not record here a numerical score on an achievement test. Instead, record here a rating of one to five, representing your best judgment of the pupil's level of achievement. In the early grades, judgments can be based on relative superiority of achievement. In later grades, actual achievement test scores or grade point averages can be used as a basis of judgment.

Rating #1: Superior achievement, achievement test scores 3 or more grades above his actual grade placement, "A" average.

Rating #2: Above average achievement, test scores two grades above actual placement, "B" average.

Rating #3: Average achievement test scores at grade or 1 grade above or below, "C" average.

Rating #4: Below average achievement, score two grades below, "D" average.

Rating #5: Low achievement, 3 grades or more below, "E" or failing grades.

COLUMN 7: Physical handicaps. Opposite the names of those children who are problems to themselves and to you because of their physical handicaps, list one or more of the following areas that describe the child. Write in:

"poor vision" - if he rubs eyes frequently, frowns when reading, stumbles or runs into objects, can't follow a ball in motion, is irritable or cries when doing close work, holds things close to eyes, sometimes can't distinguish colors, complains of headaches, dizziness, or nausea.

"poor hearing" - if he seems inattentive or even "stupid", does not respond to questions or asks for repetitions, often speaks very loudly or softly or leaves out sounds, often holds head in tilted position or turns one ear.

"poor speech" - if he substitutes one letter for another, lisps, stutters, omits sounds, distorts words, mumbles continually, tries hard but can't produce sound at times.

"other" - if he has poor motor control and coordination, walks with limp or on toes and ball of foot only, has pain during exercise, has jerky motions, has defective bones, muscles, heart, lungs, kidneys, etc.

COLUMN 8: Maladjustment. Write in one of the following four words opposite those children to whom they apply. Write in:

"withdrawn" - if he is exceptionally shy, fearful, easily upset and discouraged, frequently daydreams, doesn't stand up for himself, may be "too good", feelings are easily hurt, usually is unnoticed by other children.

"aggressive" - if he is excessively quarrelsome, defiant, destructive, a bully, a pest, fights others, may steal and lie, gets mad easily, frequently disrupts the class.

"anxious" - if he shows extreme nervous habits, such as nail biting, thumb sucking, muscle jerking, hair pulling, picking and scratching.

"other" - if there are other kinds of actions and attitudes which do not seem to be covered in the above classes, but which nevertheless appear as indications of serious problems, such as frequent absences, being excluded by group, jealous, unhappy, etc.

COLUMN 9: Environmental Handicaps. How does this child come to school in the morning - eager for school, hating school, or somewhere in-between? This rating has to do with the out-of-school influences on the child and whether they help or hinder his education. The home, neighbourhood, and cultural background are probably most important of these influences.

Give each child a rating of I, II, or III according to the descriptions given below. Try first to put him in I or III, and if he doesn't fit the extremes then place him in II. In an average group about 20% would fall in I, 20% in III, and 60% in II. Some schools, of course, will have more than an average number in either I or III.

Rating #1:

Give this rating if the child has a majority of the following characteristics. He usually comes to school ready and eager to learn. He attends school regularly, is neatly dressed and groomed. He eats well, has sufficient regular sleep, and is ready for all of the daily activities. He has had all of his immunizations, and is taken to the doctor and dentist for regular check-ups. He brings records, books, and other materials from home to share with the other children, and it is evident that his family has many interests. His parents take an active part in school affairs and are ready to help the teacher in any way they can. There are books and magazines in the home, and learning and education are held in high esteem by the family. He probably is looking forward to the time when he will be going to college or to

other advanced schooling. He enjoys school, tries to do his best, and is accepted by the other children.

Rating #II:

Give this rating if the child comes to school with an average readiness for school work; that is, if he is not extreme enough to be most like either I or III.

Rating #III:

Give this rating if the child exhibits many of these characteristics. He is usually not able to concentrate on his studies when he comes to school. He may be a year older than most of the other children in his grade, and his work is not up to the accepted standard. He probably has not been very regular in attendance and shows very little interest in school work. He may have been retained in one grade. He may be dirty when he comes to school, with little or no attention to his hair and teeth. He has frequent colds and often acts actually hungry. When attempts have been made to help the child through the PTA or welfare agencies, the father or mother has frequently been uncooperative. The parents rarely visit the school except to complain about something, and they take up no responsibilities in school affairs. They are critical of school promotional policies, and feel that the teacher and principal and other children "pick on" their child. The child has already (upper elementary grades) begun to talk of the time when he can "quit" school. In some cases the child may present the opposite picture, of having so many strong pressures from the family that he is unable to function at school.

APPENDIX B

HOW TO STUDY YOUR SCHOOL POPULATION

DROP-OUT RECORD

For the School Year 19 - 19 .

(Record names of pupils who have left school and are still living in community)

Now:	
Name	
Address	
Grade at Time Dropped	
Age at Time Dropped	
I.Q.	
Doing Nothing	
Working	
Home Maker	
Corrective or Custodial Institution	
Misc.	

APPENDIX C

HOW TO STUDY YOUR SCHOOL POPULATION

ROSTER OF _____ *STUDENTS

Name	Age	Grade	School

* Fill in "gifted", "slow learner", etc.

Instructions for Filling in ROSTER OF ____ * STUDENTS

From the TEACHER REPORT BLANKS now list on separate rosters the children who meet the following qualifications:

A. Gifted:

List all children with I.Q. ratings of 1 (column 5).

B. Slow learners:

List all children with I.Q. ratings of 4.

C. Educable mentally handicapped (EMH):

List all children with I.Q. ratings of 5 whose I.Q. is 50 or above.

D. Trainable mentally handicapped (TMH):

List all children with I.Q. ratings of 5 whose I.Q. is 50 to 25. Add to the list any children who are too low in ability to attend school, or any children attending residential schools for the mentally retarded outside the community.

E. Defective Vision:

List all children so identified by teachers.

F. Blind:

Blind children will not likely be in school, but list any such children that are known in the community.

G. Impaired hearing:

List all children so identified by teachers.

H. Deaf:

You are not likely to have completely deaf children in school. List deaf children in the community who are not in school or who are in residential schools, using whatever sources of information you have available (nurses, doctors, etc.).

I. Other physical defects:

List all children marked on the TEACHER REPORT BLANKS as "other". If you know of additional children in the community, they should be added to the list. Principals, public health nurses, welfare workers and others might be consulted to see if they know of any home-bound cases in the community.

J. Defective speech:

List all children so marked by teachers.

K. Maladjusted:

Make four separate lists here, marked "maladjusted-withdrawn", "maladjusted-aggressive", "maladjusted-others". These lists will be helpful later on in planning remedial programs. However, for the total maladjusted count, add the four together.

L. Malachievers:

A rough estimate of the malachievers (over and under) can be obtained by comparing the ratings in Column 5 and 6 of the TEACHER REPORT BLANK. Again, make two different lists, one for the over-achiever and the other for the under-achiever, and add them together for the total count. For the under-achiever, list all children who have Achievement Ratings (Column 6) two or more levels below their I.Q. Ratings (Column 5). For instance, any child with an I.Q. rating of 1 whose Achievement Rating is 3, 4, or 5 is classified as an under-achiever on this rating system.

Conversely, list or count the over-achievers. The over-achiever is one whose Achievement Rating is two or more levels above his I.Q. Rating. For instance, a child with an I.Q. Rating of 4 and an Achievement Rating of 2 is classified as an over-achiever.

M. Environmentally handicapped:

Put on this list all those children marked "III" by the teacher in column 9. These children are handi-

capped by their homes or neighborhood.

N. Drop-outs: Total the number of drop-outs from the separate DROP-OUT RECORD sheets.

APPENDIX D

How To Study Your School Population

Population Summary

Key Number

Total Present
Enrollment

1	2*	3	4	5
Kind of Student	Estimated Percentage of General Population	Number to Expect in Your Schools or System	Number In Your Sample	Number in Your School or System (Actual or Estimate)
A. Gifted	5% x ____ = ____	X ____ = ____		
B. Slow learners	15% x ____ = ____	x ____ = ____		
C. Mentally Handicapped, Trainable	$\frac{1}{2}\%$ x ____ = ____	x ____ = ____		
D. Mentally Handicapped, Educable	$3\frac{1}{2}\%$ x ____ = ____	x ____ = ____		
E. Defective Vision	$\frac{1}{2}\%$ x ____ = ____	x ____ = ____		
F. Blind		x ____ = ____		
G. Impaired Hearing	$1\frac{1}{2}\%$ x ____ = ____	x ____ = ____		
H. Deaf	$\frac{1}{2}\%$ x ____ = ____	x ____ = ____		
I. Other Physical Defects	2% x ____ = ____	x ____ = ____		
J. Defective Speech	6% x ____ = ____	x ____ = ____		
K. Maladjusted	7% x ____ = ____	x ____ = ____		
L. Malachievers		x ____ = ____		
M. Environmentally Handicapped	20% x ____ = ____	x ____ = ____		
N. Drop Outs		x ____ = ____		

* (These percentages are not additive because the same child may be listed more than once).

SUMMARIZING YOUR DATA AND EVALUATING YOUR PRESENT PROGRAM

You are now ready to fill in the POPULATION SUMMARY. First of all, record the total present enrollment in your entire system in the appropriate box in the upper left-hand corner. If you have teachers' reports from every classroom, you may disregard the "key number" box and the entire Column 4 (draw a line through them). If you have used a sample, such as one out of two or one out of six classrooms, enter 2 or 6 in the "key number" box in the upper left-hand corner.

Col. 3. Fill in Column 3 by multiplying your total enrollment by the percentages (general averages) in Column 2. For instance, if your total enrollment is 1200, your expected number (Col.3) of gifted students would be 60 (5% of 1200); the expected number of slow learners would be 180 (15% of 1200).

Col. 4. (If you have reports from every classroom disregard this column). If you have used a sample, record here all of the totals of the rosters from ROSTER OF _____* STUDENTS as the actual number of gifted, slow learners, etc. in your sample.

Col. 5. If you have surveyed every classroom, record here the totals obtained in ROSTER OF _____* STUDENTS.

If you have used a sample, such as one out of six classrooms, multiply the figures in Col. 4 by your key number, and enter these totals in Col. 5. For instance, if you have listed 9 gifted students on the ROSTER OF _____* STUDENTS, multiply by 6 (key number) for an estimated number of 54 gifted students in your entire system.

B30002